

Our ref: 003978-LTR-4

September 08, 2021

Sheri Bianchin
Remedial Project Manager
EPA Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

**Conditional Approval and Final Comments
Regarding the Conceptual Plan Letter (the Plan) for Modifications to the
Wausau Drinking Water Treatment Facility (DWTF)
Wausau Water Supply Superfund Site
Wausau, Wisconsin**

Dear Ms. Bianchin:

On behalf of the group of responsible parties (the Group) for the Wausau Water Supply National Priorities (NPL) Site, located in Wausau, Wisconsin (Site), GHD would like to provide responses to United States Environmental Protection Agency's (USEPA) and Wisconsin Department of Natural Resources' (WDNR) comments and requests for additional information regarding the Conceptual Plan Letter for Modifications to the Wausau Drinking Water Treatment Facility (DWTF). Responses to comments are below.

1. General Comments

1. Comment

EPA and WDNR's understanding of the Plan is as follows: The Plan involves the City building a new treatment facility at a different location at the west side of the River with air stripping treatment to address the groundwater contamination from the water extracted from CW-6. Removing this well from the potable system would eliminate the need to convey raw water across the river to the new treatment facility. The City will continue to pump and withdraw the groundwater from the east side of the River in order to maintain the cone of depression and capture of the contamination plume. The pumping rate will be maintained to meet the EPA-recommended volume of 4,680,000 gallons per week. However, the water from CW-3 will no longer be treated and will instead be diverted and discharged to a storm sewer and then ultimately to the Wisconsin River rather than into the municipal water system. This discharge will meet any permit requirements from the WDNR. The VOC concentrations detected in samples taken from CW-3 are below the federal MCLs and WDNR's ESS. Please confirm that the information is correct. Further elaborate on the permitting process for the proposed discharge to the River. Describe further the air strippers that will be part of the new DWTF and how the design will be able to treat the extracted water from CW-6. Last, describe whether any modifications to the pumping rates or frequency of CW-6 are anticipated.

GHD Response

The summary provided by the USEPA and WDNR is accurate. Regarding the permitting process, GHD plans to work with the WDNR's Bureau of Water Quality to determine if the Group will be able to modify their existing Wisconsin Pollutant Discharge Elimination System (WPDES) permit (Permit #WI-0025739-09-0) or if a new WPDES permit will be required. Upon the State's determination of the permit requirements, GHD will assist the group in filing a Notice of Intent (NOI) letter for a new WPDES permit if necessary.

The air strippers in the new DWTF are functionally identical to those in the existing system for CW-6. There is no change in the way water will be treated between the existing system and the new DWTF. At this time, no proposed modifications are expected for the pumping rates or frequency at CW-6.

2. Comment

The letter described CW-3 as having 58-year-old equipment and it is also difficult to maintain. While CW-3 will no longer be needed to supply drinking water, this well is needed to remain operational to divert the residual contaminants in wells with higher concentrations from entering the river system naturally. Therefore, a plan should be made to rehabilitate or upgrade the CW-3 well components to ensure it remains effective in pumping the requisite volume of water.

GHD Response

The Group understands that CW-3 operation is a critical requirement of the remedy at the Site. The well is formally inspected annually as part of its regular maintenance program. Additional maintenance is completed at CW-3 as necessary to ensure the well is able to pump the minimum 4,680,000 gallons per week that the EPA recommended in their August 1995 letter. The group understands that the well must be kept operational to ensure proper hydraulic capture of the contaminant plume on the East Bank of the Site. Currently, the well is able to meet its requirements. Additional measures will be taken to ensure CW-3's continued operation. These may potentially include regular well rehabilitation, well component replacement and/or upgrades, and infrastructure maintenance, as necessary.

The Group would also like to inform the USEPA and WDNR that CW-3 will continue to be relied upon to provide drinking water for the City until the new DWTF is fully operational. The updated schedule is provided in response to USEPA and WDNR question #11, below.

3. Comment

Provide more detail regarding what will happen to the pumped water extracted from CW-3 and how the work will be accomplished and provide plans and specifications.

GHD Response

Water pumped from CW-3 will be piped from the well house and discharged over riprap and allowed to drain into the Wisconsin River. A figure, provided by the City shows the planned piping path, including the location of the riprap is included in the Plan. Engineering schematics will be provided to the USEPA and WDNR as part of the ongoing project quarterly reports as they become available. As noted in the response to USEPA and WDNR question #2, above, the City does not plan to take CW-3 out of service until the new DWTF is fully operational.

4. Comment

The Plan should provide additional details as to whether the sewer pipes and reducers have the capacity to handle the volume of required effluent both in normal times and during storm and flood events.

GHD Response

The piping discharge system has been designed to be able to handle effluent volumes in both times of normal operation, as well as storm and flood events. The Plan has been updated to reflect the USEPA and WDNR's comment. Additionally, a figure has been added to superimpose the 100 and 500-year flood zones onto the CW-3 Plan area, for reference.

5. Comment

The Plan should state whether sampling of the extracted water from CW-3 is proposed to remain on the current sampling plan schedule and whether modifications will be proposed to the existing sampling plan and reporting procedures including the discharge of water to the River. Provide additional justifications regarding how the sampling plan and reporting procedures will demonstrate continued protectiveness to human health and the environment.

GHD Response

The Plan has been updated to reflect the EPA and WDNR's comments. CW-3 will continue to be sampled during the annual groundwater monitoring event. The Group plans to follow the sampling frequency and procedures outlined and required by the WPDES permit for CW-3's effluent discharge. Reporting of the annual results will be included in the Annual Monitoring Report (AMR) and regular updates will be included in the existing quarterly progress reports that are submitted to the USEPA and WDNR.

Due to the very low concentrations of constituents of concern in the groundwater at CW-3 and the continued operation of CW-3 at the prescribed volume and frequency required by the USEPA as part of the remedy at the Site, no significant difference in protectiveness to human health and the environment is expected by taking CW-3 out of commission as a water supply well for the City's drinking supply. By adhering to WPDES permit requirements for operation, discharge, sampling, and reporting, the Plan will be sufficiently protective of human health and the environment.

6. Comment

The Plan should state whether sampling of the extracted water from CW-6 is proposed to remain on the current sampling plan schedule and whether modifications will be proposed to the existing sampling plan and reporting procedures. Provide justifications regarding how the sampling plan and reporting procedures will demonstrate continued protectiveness to human health and the environment.

GHD Response

The Plan has been updated to reflect the EPA and WDNR's comments. There are no significant changes in the operation of CW-6 as part of the remedy at the site. Pumping effluent water to the new treatment plant for air stripping at the new facility is procedurally identical to the previous DWTF setup. The current sampling plan and reporting procedures have been deemed appropriate and protective to human health and the environment for many years. CW-6 will continue to be sampled during the annual groundwater monitoring event. Reporting of the annual results will be included in the AMR and regular updates will be included in the existing quarterly progress reports that are submitted to the USEPA and WDNR, as necessary.

7. Comment

Describe how likely an unforeseen circumstance may arise and levels of VOCs in the groundwater rise in CW-3 and describe what the contingency measures would be in such a scenario.

GHD Response

It is extremely unlikely that source area VOC levels will rise to levels that would affect the effluent discharge from CW-3 due to several factors. The source area contaminant mass has shown a general decrease in size over the years based on decades of groundwater data in the area. Additionally, the distance between the

contaminant source area and CW-3 is sizeable and has allowed for natural plume attenuation in the direction of hydraulic capture on the East Bank, i.e., the direction of CW-3. As stated in the Plan, there has previously been an instance where a large release of source area contaminants occurred in the groundwater plume, however, groundwater data over subsequent years from East Bank monitoring wells indicated a decreasing trend in VOC concentrations with increasing distance from the source area. When the plume eventually migrated to CW-3 the increase in VOC concentration in the CW-3 influent was negligible.

The City does not plan to fully decommission the existing CW-3 air strippers. The plan is to store the air strippers in the event they may be utilized in the future. In a scenario where groundwater data from East Bank wells indicated a risk of VOC concentrations in CW-3 effluent discharge that may exceed WPDES discharge requirements, the City would utilize the existing air strippers to mitigate the risk. A temporary modification to the sampling plan would also be utilized to better track the timing and severity of the increased VOC concentrations to ensure compliance with WPDES discharge permit requirements.

8. Comment

Include a provision to provide regular reports to EPA and WDNR regarding the water discharge permitting process and the work done to convert from the existing treatment plant to the new treatment plant.

GHD Response

Regular project updates will occur in the existing reports that are currently being submitted to the USEPA and WDNR quarterly. The WPDES permitting process progress, as well as progress on the conversion to the new DWTF will be included in these quarterly reports, effective immediately.

9. Comment

Explain in more detail the trend of contamination found in the groundwater on the east side of the Wisconsin River and why air strippers are no longer needed as part of the treatment system from CW-3 including an analysis of the levels of contamination from CW-3 since the inception of the remedy for the Site. Explain what will happen to the existing air strippers. Explain further what will happen to the pumped water from CW-3.

GHD Response

VOC concentrations on the east side of the Wisconsin River have generally been decreasing or stable over the last several decades. Instances of increased VOC concentrations have occurred at many of the monitoring well locations in recent years, however CW-3 seems to be far enough away from the source zone that even moderate changes in VOC concentrations near the source zone do not eventually show up in CW-3 sampling data. CW-3 influent samples have not exceeded any enforcement standards for any constituent of concern since 1998 and total VOC concentrations have been steadily decreasing since that time. Figure 2 in the Plan illustrates this downward trend. Prior to 1998, total VOC concentrations in the CW-3 influent were much higher than recent concentrations. Total VOCs at CW-3 during the first sampling event in 1994 were approximately 35 µg/L, compared to below 4 µg/L in the most recent ten sampling events.

CW-3 influent sampling data has consistently shown levels of VOC constituents of concern to be below drinking water enforcement standards for over twenty years. It is anticipated that the enforcement standards for discharge to the Wisconsin River will likely be less conservative than the current drinking water standards. Since the City plans to discontinue use of CW-3 as a drinking water source well, there is no need to continue operating they air strippers.

The City plans to retain the air strippers in the unlikely event they would need to be used to treat CW-3 effluent discharge in the future.

Water pumped from CW-3 will be piped from the well house and discharged over riprap and allowed to drain into the Wisconsin River. A figure, provided by the City showing the planned piping path, including the location of the riprap is included in the Plan.

10. Comment

Include a provision to provide regular reports to EPA and regarding the attempts to NPDES and the work done to convert from the existing treatment plant to the new treatment plant. *Provide to provision in the Plan for EPA and WDNR to receive continued documentation that the discharge is in compliance with the permit and/or effluent standards set by the WDNR.*

GHD Response

As previously stated, regular project updates will occur in the existing reports that are currently being submitted to the USEPA and WDNR quarterly. The WPDES permitting process progress, as well as progress on the conversion to the new DWTF will be included in these quarterly reports, effective immediately. CW-3 discharge sampling data will also be included in the quarterly reports.

11. Comment

Provide an updated schedule.

GHD Response

The City began construction on the new DWTF in 2020. The new facility is planned to begin preliminary phased operations by Fall 2021 and may be completely operational by Spring 2022. Continued operation of CW-3 will be needed to supplement the City water supply until the new DWTF is fully operational. As such, the City will not implement the details of the Plan until that time, with the exception of moving forward with the WPDES permitting process. GHD will notify the USEPA and WDNR of project progress on monthly project calls and formally in the quarterly progress reports, as previously mentioned.

If you have any additional questions, please contact me at (612) 524-6841.

Regards,



Kiel Jenkin
Scientist

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KJ/md/LTR-4

Encl.

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Our ref: 003978-LTR-5

September 08, 2021

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Remedial Project Manager
EPA Region 5
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Mr. Matt Thompson
Hydrogeologist
Wisconsin Department of Natural Resources
1300 W. Clairemont Avenue
Eau Claire, Wisconsin 54701

**City of Wausau New Drinking Water Treatment Facility
and Changes to the Treatment of City Well CW-3-Revised
Wausau Water Supply NPL Site
Wausau, Wisconsin**

Dear Ms. Bianchin and Mr. Thompson:

As presented to you during the Site inspection on October 29, 2019, the City of Wausau (City) is building a new Drinking Water Treatment Facility (DWTF) on the west side of the Wisconsin River. City water supply well CW-3 is the only City well on the east side of the river and it will no longer be practical to operate it for water supply. Since CW-3 is a component of the remedy for the Wausau Water Supply National Priorities List (NPL) Site, the City is requesting guidance and assistance from the United States Environmental Protection Agency (EPA) and Wisconsin Department of Natural Resources (DNR) to get approval for a modification of the Record of Decision (ROD). The City is proposing to continue remedial operation of CW-3 and discharge to the Wisconsin River via the storm sewer. Given the very low concentrations of Site contaminants in the CW-3 influent, continued treatment, via air stripping, is not needed.

Additional background information, current CW-3 data, proposed future operation of CW-3, and the City's schedule for completion of the new DWTF are presented below.

1. Background

In 2017 the DNR issued a mandate requiring the City to address several deficiencies at their DWTF by December 31, 2022. Most notably the City must relocate the clearwell, the tank that holds treated water, above the water table.

The costs for addressing the mandated deficiencies are substantial. Thus, the City completed a planning process to consider what other improvements should be made and to explore potential alternatives. Given the age of the current DWTF, it became apparent that the costs to rehabilitate the entire facility would be very large, prompting the City to seriously consider the alternative of relocating the DWTF. Relocation of the DWTF has the additional benefits of moving the water treatment facility away from the riverbank (the plant is currently located in the Wisconsin River 500-year floodplain) and nearby riverbank recreational improvements (River Front Development).

In early 2019 the City Council voted to relocate the DWTF to a parcel of property approximately 1 mile north of the existing DWTF and on the west side of the river. The new facility will be located very close to most of the

West Bank Wellfield water supply wells. Design is completed and construction of the new facility began in 2020. Figure 1 presents the locations of the City supply wells, the current DWTF, and the new DWTF.

After startup of the new DWTF, CW-3 will be isolated from the rest of the well field. CW-3, and associated equipment, is approximately 58 years old. In order for CW-3 to remain a viable drinking water supply well, it would require very extensive renovations and modifications. The City does not need CW-3 to meet its water supply capacity requirements and the raw water supplied is among the most challenging to treat due to naturally occurring iron, manganese, and organic carbon.

The recommended pumping rate for CW-3 was established in an August 4, 1995 letter from EPA. In accordance with the letter, pumping of CW-3 was to be maintained between 65 hours per week at 1,200 gallons per minute (gpm) to 100 hours per week at 1,100 gpm. This equates to a minimum of 4,680,000 gallons per week.

2. CW-3 Data Evaluation

CW-3 is approximately 1,000 feet northeast of the principal contaminant source area on the East Bank (former Wausau Chemical Corporation at 2001 N. River Drive). The contaminants of concern on the East Bank portion of the NPL Site are chlorinated volatile organic compounds (VOCs), specifically, tetrachloroethene (PCE) and its degradation products – trichloroethene (TCE), cis-1,2-dichloroethene (c12DCE), and vinyl chloride (VC). The Site cleanup criteria for these VOCs are the EPA and DNR drinking water criteria listed below:

- Tetrachloroethene 5 µg/L
- Trichloroethene 5 µg/L
- cis-1,2-Dichloroethene 70 µg/L
- Vinyl chloride 0.2 µg/L

When operating, CW-3 pumps at a rate of approximately 1,250 gpm, creating a large zone of capture in the alluvial aquifer on the east side of the river that captures and removes the East Bank contaminant plume. CW-3 influent samples for VOC analysis have been collected at least annually as part of the Site’s long-term monitoring program since 1993. Figure 2 shows the VOC concentrations at CW-3 since 1998. As indicated by the chart, VOC concentrations have decreased to very low levels and vinyl chloride has not been detected since 2010. As presented in the 2020 sampling data, no individual VOC exceeded 1.0 µg/L. TCE has not exceeded its cleanup criteria since 1999, and neither PCE nor c12DCE exceeded their respective cleanup criteria over the last 20 years.

In 2009, source area groundwater concentrations at monitoring well WC-3B spiked temporarily to over 1,000 µg/L of PCE due to construction and increased infiltration of precipitation at the property. However, this did not significantly affect the influent concentrations at CW-3, as there was only a minor increase in PCE concentrations at CW-3 over the following two to three years (increased from 2.0 µg/L in 2009 to 2.5 µg/L in 2012— see Figure 2).¹ Thus, although small “hot spots” may remain in the source area, the remaining contaminant mass is small and potential future source area spikes would not cause significant increases in the CW-3 influent.

3. Proposed Future Operation of CW-3 and CW-6

Based on current and historical groundwater data, VOC concentrations in CW-3 do not exceed drinking water standards and continued treatment of the water is not necessary. After the new DWTF becomes operational in 2022, the current DWTF will no longer be available to treat the water from CW-3 and the City will discontinue

¹ The groundwater travel time from the source area to CW-3 is estimated to be 1.5 to 2 years.

the use of CW-3 for water supply purposes. In order to continue using CW-3 as a remediation well, the City is proposing to discharge the pumped water to the storm sewer, which would subsequently discharge to the Wisconsin River. The pumping rate will be maintained to meet the EPA-recommended volume of 4,680,000 gallons per week.

The enclosed figure, provided by the City, shows the force main from CW-3 to the proposed sewer tie-in and river discharge points. It is anticipated that the discharge to the river will have to meet the substantive requirements of a Wisconsin Pollution Discharge Elimination System (WPDES) general permit.

The CW-3 effluent piping discharge system has been designed to be able to handle effluent volumes in both times of normal operation, as well as storm and flood events. The enclosed figure from the City shows the construction diagram for the CW-3 discharge piping system superimposed onto the 100 and 500-year flood zones, for reference.

CW-3 will continue to be sampled during the annual groundwater monitoring event. The Group plans to follow the sampling frequency and procedures outlined and required by the WPDES permit for CW-3's effluent discharge. Reporting of the annual results will be included in the Annual Monitoring Report (AMR) and regular updates will be included in the existing quarterly progress reports that are submitted to the USEPA and WDNR.

Due to the very low concentrations of constituents of concern in the groundwater at CW-3 and the continued operation of CW-3 at the prescribed volume and frequency required by the USEPA as part of the remedy at the Site, no significant difference in protectiveness to human health and the environment is expected by taking CW-3 out of commission as a water supply well for the City's drinking supply. By adhering to WPDES permit requirements for operation, discharge, sampling, and reporting, the Plan will be sufficiently protective of human health and the environment.

There are no significant changes in the operation of CW-6 as part of the remedy at the site. Pumping effluent water to the new treatment plant for air stripping at the new facility is procedurally identical to the previous DWTF setup. The current sampling plan and reporting procedures have been deemed appropriate and protective to human health and the environment for many years. As with CW-3, CW-6 will continue to be sampled during the annual groundwater monitoring event with the same reporting procedures.

This proposed change remains protective of human health and the environment and continues to meet Applicable or Relevant and Appropriate Requirements (ARARs). As required by the ROD, CW-3 would continue to operate as a component of the approved remedy. Since this is not a fundamental change to the remedy, it is our opinion that this modification to the ROD can be administered through an Explanation of Significant Differences (ESD).

4. Reporting

Regular project updates will occur in the existing reports that are currently being submitted to the USEPA and WDNR quarterly. The WPDES permitting process progress, the conversion of CW-3 from a drinking water source well including the new discharge piping system construction, as well as progress on the conversion to the new DWTF will be included in these quarterly reports.

5. Schedule

The City began construction on the new DWTF in 2020. The new facility is planned to begin preliminary phased operations by Fall 2021 and may be completely operational by Spring 2022. Continued operation of CW-3 will be needed to supplement the City water supply until the new DWTF is fully operational. As such, the City will not implement the details of the Plan until that time, with the exception of moving forward with the WPDES

permitting process. GHD will notify the USEPA and WDNR of project progress on monthly project calls and formally in the quarterly progress reports, as previously mentioned.

If you have any additional questions, please contact me at (612) 524-6841.

Regards,

A handwritten signature in black ink, appearing to read "Kiel Jenkin". The signature is fluid and cursive, with a prominent initial "K" and a long, sweeping tail.

Kiel Jenkin
Scientist

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kiel.jenkin@ghd.com

KJ/md/LTR-5

Encl.

Figures

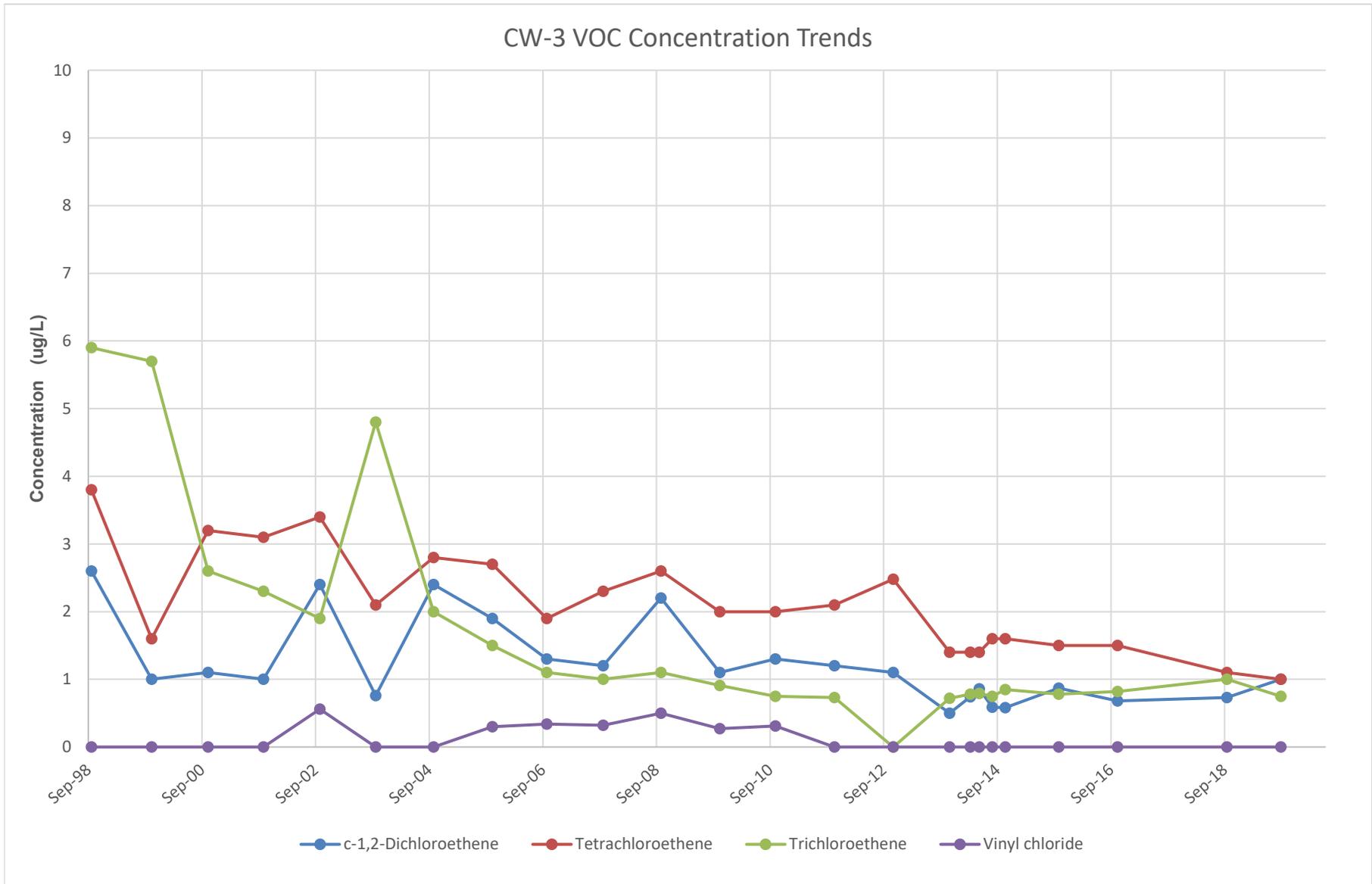


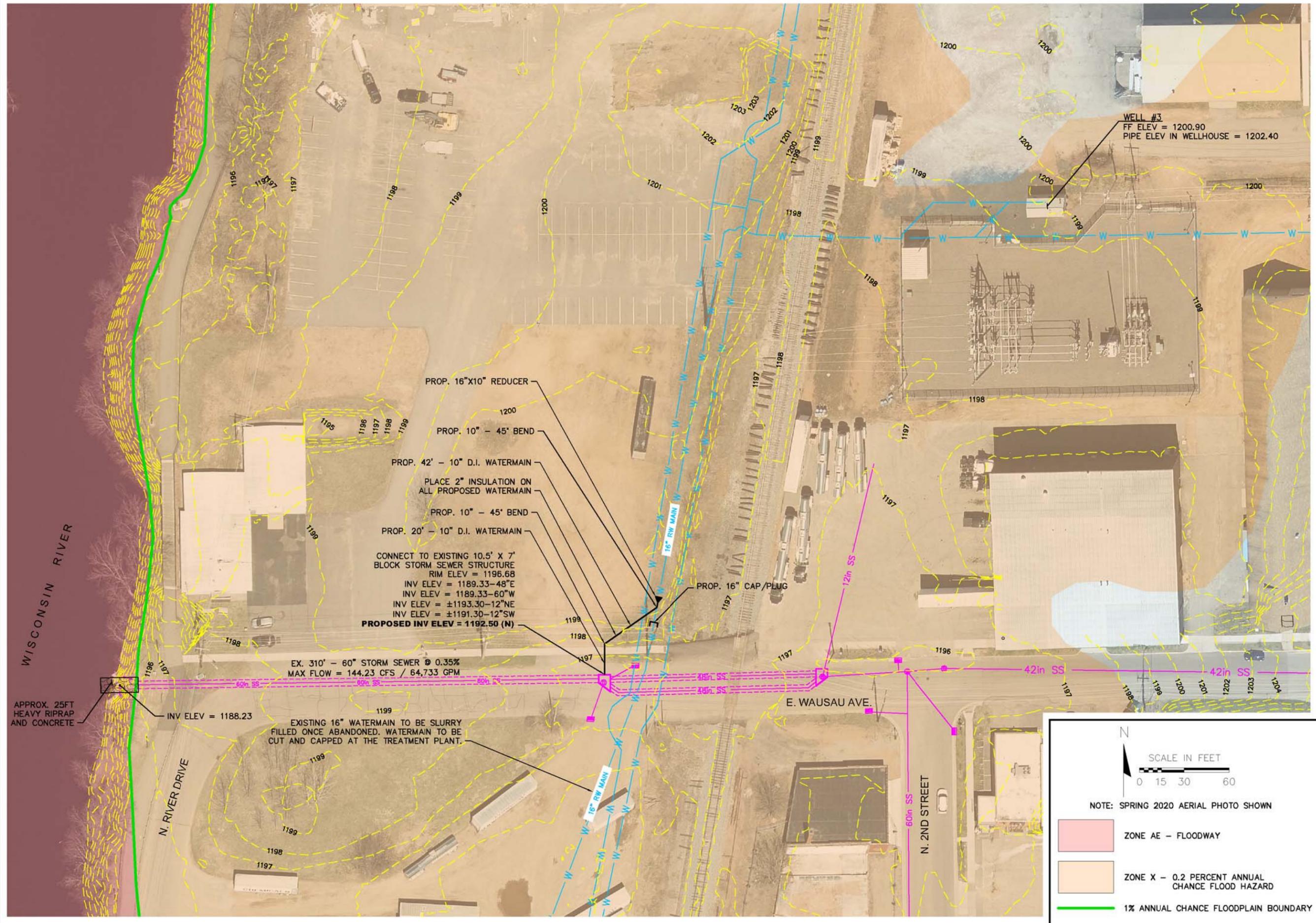
FIGURE 2

CITY WATER SUPPLY WELL CW-3 VOC CONCENTRATION TREND

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN

Attachment

DWG FILE NAME: O:\Engineering\DWG\PROJ\1132\DWG\Wells3_Discharge.dwg, 9/1/2021 3:41:13 PM, City of Wausau - Engineering Department, Plotted by: J.D. VanBoxel



WISCONSIN RIVER

N. RIVER DRIVE

E. WAUSAU AVE.

N. 2ND STREET

- PROP. 16"X10" REDUCER
- PROP. 10" - 45° BEND
- PROP. 42" - 10" D.I. WATERMAIN
- PLACE 2" INSULATION ON ALL PROPOSED WATERMAIN
- PROP. 10" - 45° BEND
- PROP. 20" - 10" D.I. WATERMAIN
- CONNECT TO EXISTING 10.5' X 7' BLOCK STORM SEWER STRUCTURE
RIM ELEV = 1196.68
INV ELEV = 1189.33-48"E
INV ELEV = 1189.33-60"W
INV ELEV = ±1193.30-12"NE
INV ELEV = ±1191.30-12"SW
PROPOSED INV ELEV = 1192.50 (N)
- PROP. 16" CAP/PLUG

EX. 310' - 60" STORM SEWER @ 0.35%
MAX FLOW = 144.23 CFS / 64,733 GPM

APPROX. 25FT HEAVY RIPRAP AND CONCRETE
INV ELEV = 1188.23

EXISTING 16" WATERMAIN TO BE SLURRY FILLED ONCE ABANDONED. WATERMAIN TO BE CUT AND CAPPED AT THE TREATMENT PLANT.

WELL #3
FF ELEV = 1200.90
PIPE ELEV IN WELLHOUSE = 1202.40

N

SCALE IN FEET

0 15 30 60

NOTE: SPRING 2020 AERIAL PHOTO SHOWN

- ZONE AE - FLOODWAY
- ZONE X - 0.2 PERCENT ANNUAL CHANCE FLOOD HAZARD
- 1% ANNUAL CHANCE FLOODPLAIN BOUNDARY

CITY OF WAUSAU
Engineering Department
407 GRANT STREET WAUSAU, WI 54403-4703
(715) 261-6740 FAX (715) 261-6769

E. WAUSAU AVENUE
N. 2ND ST RR TRACKS TO WISCONSIN RIVER
WELL NO.3 STORMWATER CONNECTION PLAN

ISSUED FOR	REVISIONS	DATE	DEPT.
PRELIMINARY	J.D.VANBOXEL	09/01/2021	ENGR.
REVIEW/APPROVAL			DEPT.
BIDDING/CONST.			DEPT.
REC. REF. DWG.			DEPT.
OFFICE USE			DEPT.

SURVEYED BY: J.D. VANBOXEL
DESIGNED BY: T. J. NIKSICH
DRAWN BY: J.D. VANBOXEL
APPROVED BY: ERIC LINDMAN
POINT FILE:

SHEET NO. 1
OF 1 SHEETS
FILE NUMBER 19-12-20